

INTERNATIONAL CITY MANAGERS' ASSOCIATION

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## THE MANAGEMENT OF MUNICIPAL BUILDINGS

How should building management activities be organized; what planning and procedures are necessary for cleaning, maintenance, and repair; and what methods should be used in allocating space?

Good building management is dependent upon effective organization and planning, work standards and schedules for maintenance and repair, space allocation, real property management, and related activities such as grounds maintenance, fire prevention, and police or watchman protection. Preventive maintenance of buildings and equipment is the most important part of building management and is inherent in good organization, planning, and work standards and schedules.

A clean city hall is important from the public relations point of view, and a well-maintained building is a long-term economy. This means a clean building outside, clean corridors and offices decorated according to a schedule, and clean public rest-rooms. Information on how these activities are currently being controlled, as reported by the officials of 46 cities who answered a questionnaire sent out by the International City Managers' Association, is summarized in this report.

### Organization and Procedures

Organization. Attractive looking buildings and long-term maintenance of buildings and equipment are responsibilities of the chief administrator. In a small city it may mean direct supervision of a maintenance mechanic and a couple of janitors. In a larger city it may mean checking to see that the work is done properly by a division of the public works department or by a department of property management.

The larger cities have centralized building management activities under an employee who is responsible either to the chief administrator or to the director of public works. This agency makes or oversees all alterations, repairs, cleaning, and preventive maintenance, and may regulate space allotment. The development of work standards, cleaning and maintenance schedules, and inspection of contracted work also are functions of such an agency.

A central building management department usually consists of a headquarters staff and two operating divisions: custodial and maintenance. The custodial division can be organized by building units with building custodians responsible for cleaning the building and the operation and maintenance of elevators, heating, and ventilating equipment. The custodian would oversee all contractual work done in the building.

The maintenance division should consist of journeymen carpenters, painters, other tradesmen, and laborers. This division would perform all repairs requiring skilled personnel, paint and decorate offices and buildings, build shelving, rearrange partitions, and install new facilities. The headquarters staff would be responsible for records, space utilization, ordering of supplies, personnel administration, cost accounting data not centralized in a separate finance department, and real property controls.

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In a smaller city the work does not justify such a varied organization. Custodial services for the city hall may be supervised by a working custodial foreman. He would report to a designated official, perhaps to an administrative official in the public works or finance departments or to the city manager. This supervisory official would assist the custodian in making work schedules, ordering supplies, and inspecting work. A general mechanic, able to perform minor carpentry, plumbing, painting, and electrical repair work may be kept at work full time in the public works department. He would be able to perform most minor maintenance and repair and the larger or more complicated jobs could be contracted.

Review of Practices. Only one out of five cities surveyed has a central agency responsible for the maintenance of most city buildings. In nine of the 46 cities, the public works department performs most of the services as miscellaneous functions. In 14 cities the departments housed outside the city hall are responsible for the maintenance of their own buildings; the city hall is maintained by the purchasing department in three of these cities, by the auditorium custodian in three, by the engineering department in two, and by miscellaneous officials in the remainder. The city manager or someone connected with his office directs custodial and minor repair functions in 10 cities.

In Raleigh, N.C., the building superintendent is responsible for most routine and custodial work and the department of public works performs major repairs. In Eugene, Ore., the building inspection department supervises custodial services and all others are contracted. In Minot, N.D., firemen are responsible for cleaning two floors of the city hall and a utility man supervises prison labor in cleaning the basement. All repairs or alterations are contracted. The 10 cities which have a central agency responsible for all building maintenance and repair are: Long Beach and Oakland, California; Des Moines, Iowa; Portland, Me.; Cambridge, Mass; Niagara Falls, N. Y.; Cleveland Heights, Ohio; Lubbock, Tex.; and Arlington County and Richmond, Va.

Long Beach, Calif., has recently created a central services department which is responsible for all cleaning and operation of elevators and telephone switchboard. A separate department of public service handles all maintenance and repair for all city buildings in addition to their other duties.

Oakland, Calif., has a public buildings department which handles cleaning, maintenance, and repair work for all city buildings except those controlled by independent boards. Electrical work is done by the electrical department and grounds are cared for by the independent park board. Departments are charged for repairs and services other than routine maintenance. Time sheets, work orders, and regular inspections are used as control methods. Skilled tradesmen are employed for carpentry, masonry, and plumbing and electrical work.

Des Moines, Iowa, has a department of property management responsible for most phases of maintenance for all public buildings, including those leased to private operators. The police department operates the switchboard and the public works department collects and disposes of wastes. Some jobs are contracted but most redecorating is done by municipal forces. Departments are charged for services other than routine maintenance. Skilled tradesmen are employed where necessary.

Portland, Me., has a building maintenance division responsible to the purchasing agent. The division is responsible for the cleaning, maintenance, and repairing of the city hall and for the repairing of other buildings. It is supported by a lump sum appropriation. All major electrical, plumbing, carpentry, and decorating jobs are contracted. Skilled tradesmen are hired only as needed for special jobs.

Niagara Falls, N. Y., has a municipal buildings and offices division responsible for all maintenance, repairs, and cleaning of all municipal buildings. Grounds are



cared for by the city park department. Some major repair jobs are contracted. The division is supported by a lump sum appropriation. Skilled tradesmen are employed by the division.

Richmond, Va., has a division of buildings management within its public works department. The division performs repair and maintenance services for the city hall, city courts, jail, and armories. Expenses are met by annual appropriations to the division. The maintenance crew of the division performs most repair work with only major repairs or alterations contracted. The division has a regular schedule of preventive maintenance on heating plants, elevators, and air conditioning units--a contractual service performed by appropriate service companies. Emergency repairs are done on order by the buildings management division. Skilled craftsmen with city permits are used on all jobs where called for under city ordinances.

Cambridge, Mass., has a building maintenance division in the public works department which is responsible for the cleaning and repairing of all municipal buildings except schools. The city does not have a roofing maintenance crew and this is the only work contracted. Electrical maintenance is carried on by the electrical department. The division has a schedule of regular inspections of buildings and equipment. Skilled tradesmen are employed for carpentry, masonry, plumbing, electrical, and metal work. The division is supported by an annual lump sum appropriation.

Kansas City, Mo., has a building maintenance section in the public works department responsible for the repair and maintenance of all city buildings except the city hall. A separate building manager is responsible for the routine cleaning and operation of the city hall. The chief of the building maintenance section prepares a schedule of necessary work after consulting city department heads, and the schedule is submitted as a budget request. Appropriations for building maintenance and repair are made to the maintenance section, but the budget document shows in detail the amounts applicable to each department. In this way the maintenance section has control of all funds for maintenance purposes and funds can be reallocated to other jobs in case of emergency. Costs of the various departments and services also can be determined since departments are actually charged proportionate shares of building maintenance expense. The maintenance section has a small force of craftsmen to do regular maintenance work in most buildings, but all projects estimated to cost over \$2,500 are contracted to private firms.

Cleveland Heights, Ohio, has a man responsible directly to the manager who acts as assistant purchasing agent and custodian of lands and buildings. He is responsible for the maintenance and repair of all city buildings. Only large repair jobs, requiring equipment not owned by the city, are contracted. A follow-up file serves as a guide for such jobs as decorating. Skilled tradesmen are employed by the city. The activity is supported by an annual lump sum appropriation.

Arlington County, Va., has a public buildings division within its department of public works. Three sections comprise the division. One unit installs and maintains street signs, street name signs, barricades, and traffic markers, lines and lights. The second unit of carpenters and painters do construction and repair work on county buildings and bridges and build and repair barricades, cabinets, shelves, signs, tool boxes, and other miscellaneous items. The third unit handles the maintenance and operation of the court house building and annexes and of other county-owned buildings.

Finance and Records. Annual lump sum appropriation to the building management department and allocation of costs to departments on the basis of work performed are the principal methods of financing building maintenance, repair, and cleaning. The degree of detail in record keeping depends upon the extent of performance budgeting. Even in small cities accounts should be kept in sufficient detail to show extraordinary or nonrecurring expenses, unusual recurring repairs, and to accumulate repair costs.



This can be done adequately by noting the date, type of repair, and cost on a card for individual pieces of equipment and structures; for example, electrical equipment, heating and ventilating equipment, elevators, and the roof, exterior walls, and foundation of the building.

In the larger city custodial costs can be prorated to departments on an area basis. Corridors, open spaces, and grounds maintenance can be prorated on the same basis. Repairs, alterations, and special work would be billed directly to the benefiting department. A revolving fund with monthly or annual appropriations can be set up to meet the payroll, buy supplies, etc., with departments billed monthly for services.

In small cities it may be desirable to set up a building account within the general fund and to make annual appropriations to it for normal maintenance and custodial services. Major repairs, alterations, and special work would be included in departmental budgets when they are drawn up.

Forms. Job or work orders should be issued for any work which is charged directly to departments or which requires special authorization. The work order form may be combined with a work request form and should include space for a description of the work, an estimate of costs, accounts to be charged, authorization, and final cost. The back of the form may include details of labor, material, and equipment costs. The person performing or supervising the work and the date of completion also may be noted on the form.

The main purpose of a job order is to provide a basis for control of operations and to collect cost data. Routing of work orders should be as simple as possible. Ordinarily, only the department requesting the work, the finance officer, and the division doing the work is concerned. For emergency repair work requiring allocation of special reserves or for major alterations, the city manager and city engineer may be included in the routing.

The department requesting the work can fill out on the form a description of the work, authorization, an estimate of costs, and an indication as to when the work should be done. The form should then be forwarded to the finance officer who checks the authorization, assigns an account name and number to the job, and sets up an account to collect all costs. The order is then routed to the division doing the work and assigned for completion. Upon completion the requesting agency should inspect the work and certify its acceptance. The finance officer then closes the account.

### Cleaning the Building

A building that is neat and clean will create a good impression with the public even if the building itself is old fashioned in design and inconvenient in interior arrangement. There is no excuse for littered corridors and dirty restrooms. Restrooms that are in frequent use may have to be swept and "picked-up" four to eight times a day and scrubbed with soap and water one or more times a day. Custodial schedules and standards will help in keeping municipal buildings neat and attractive.

Schedules. Scheduling cleaning can save the manager's time and insure that buildings are sanitary and neat in appearance. Scheduling also guarantees that all necessary items are cleaned, inspected, and replaced regularly. The basis for a schedule is a list of all common cleaning jobs performed in city buildings. Regular inspections of the roof, foundation, and grounds of the building should also be made by the custodian. A follow-up file for painting and decorating should be developed including the date on which the building was last painted and the desired frequency. A typical cleaning schedule for the city hall would include most of the following items:



1. Daily: clean offices (dust, sweep, dry mop, polish metal work and mirrors, clean carpets, drinking fountains and lavatories); collect and dispose of waste paper; sweep and dry mop lobby and entrance; clean toilets; clean stairs and elevators; and clean jardinières.
2. Weekly: scrub stairs; scrub corridors; and scrub lobby and other public spaces (oftener in bad weather).
3. Monthly: buff all floors and wash windows.
4. As Necessary: scrub and wax floors; clean transoms and high pipes and files; wash venetian blinds; and clean light bulbs.

Work Standards. Custodial tasks are too often thought of as simple chores involving little mental effort. Even simple tasks can be done in an efficient manner if routines are developed and standards set. Knowledge of the proper use of cleaning agents and their effect on various surfaces are important parts of custodial work. Only trained employees can carry out custodial and maintenance duties with a minimum of supervision and a maximum of efficiency.

Evaluation of most building management services is a matter of informal measurement of actual results. Is the building clean? Is it warm enough in winter? Does the roof leak? Is elevator and telephone service satisfactory? The terms "clean", "comfortable", "sanitary", and "attractive" are subject to interpretations as to degree. A custodian can be instructed to open certain doors at a specified time, but it is a different story if he is instructed to maintain comfortable temperatures. Comfort varies with individuals.

Standards are used to estimate the number of personnel needed and to develop schedules of work to be done. Check lists for routine jobs, such as office cleaning, which require a number of separate tasks, and frequent inspection of the quality and quantity of work performed may supplement schedules and suggest changes in methods, duties, or organization.

Standards can be established only for routine, repetitive jobs. Repair and alteration work can be carried out under direct supervision and cost records for comparable jobs serve as standards. On the other hand, cleaning tasks can be standardized and work loads carefully established. School administrators and the army have developed cleaning standards based on a time-unit measure, square feet of space cleaned, or number of fixtures cleaned.

As an example of standards, office lighting lamps and fixtures should be cleaned periodically--twice a year is a good average. The loss in light efficiency which results from the accumulation of dust and dirt on fixtures and lamps can average 4 to 6 per cent per month. Group replacement of all light bulbs according to schedule often is cheaper than individual replacement of bulbs as they burn out.

The first step in setting work loads is to determine the duties and tasks for which the custodial staff is responsible. The next step is to estimate the probable frequency of performance of each task. Then each task can be broken down into units and the amount of time necessary to perform each unit of a task is measured. Desk density, type of floors, equipment used, and the condition of the building are determining factors.

Standards established by the General Services Administration in the federal government are intended only as guides in establishing work loads. Individual city requirements and conditions must be considered in setting up work standards. Examples



of standards established by GSA include the following:

1. Office Cleaning--14,000 square feet per man day.
2. Rug Cleaning--80 rugs (9x12) per man day.
3. Waxing Floors--5,000 square feet per man day (open area); 3,000 square feet per man day (office).
4. Buffing Floors--40,000 square feet per man day (open area); 30,000 square feet per man day (office).
5. Venetian Blind Washing--16 (4 ft. blinds) or 8 (8 ft. blinds) per man day.
6. Toilet Cleaning--80 fixtures per man day.
7. Stair Cleaning--60 flights (sweep and dust) per man day.
8. Window Cleaning--30-60 windows per man day.

#### Maintenance and Repair

Preventive maintenance is the key to good building management. A well-planned system of regular inspections of all city buildings and equipment can help the manager in the making of such decisions as when to replace a particular piece of equipment, in comparing the relative merits of different makes or brands, in calling to attention especially hard usage, and in planning replacement and repair needs. Regularly scheduled inspections of such items as the heating and ventilating plant, elevators, roof, floors, and electrical and plumbing systems will bring to light weaknesses or show where repairs or replacement are necessary. A preventive maintenance program can cut repair costs and prevent accidents or shutdowns due to faulty or wornout equipment.

Schedules. City electrical, plumbing, elevator, and building inspectors may be used to inspect structure and equipment regularly. Where the volume does not warrant hiring skilled workers, the manufacturer or distributor of specialized equipment may contract for its maintenance. The inspector should list all items requiring correction. They can then be divided into jobs which should be done immediately and those which can be delayed. Jobs which can be delayed are those where further deterioration will not result in higher repair costs or other financial loss. Emergency jobs can be done immediately and less critical jobs worked into the regular schedule.

Periodic inspections should be made of the heating and ventilating plant, elevators, electrical equipment, and plumbing fixtures. For a heating and ventilating plant the radiator valves and traps, thermostats, insulation on pipes and boiler, and other equipment should be checked regularly; summer maintenance and lay up should follow the manufacturer's specifications for the size and type heating plant.

For elevators the principal maintenance features include a daily check of equipment and weekly lubrication of moving parts. More extensive inspection and maintenance of all elevator motors, fixtures, and equipment should be done at monthly, semi-annual, and annual intervals with the help of city elevator inspectors or the manufacturer's representative.

Electrical maintenance involves the testing, repair, and replacement of high and low voltage wiring, switchboards, panel boards, fuse and switch boxes, motors, and other fixtures and equipment.

Plumbing maintenance involves the installation, maintenance and repair of hot and cold water, soil, heating, chemical, sewerage, drainage, and other pipe systems.

Repair Work. In many cases minor repair work may be done by the custodian or by a separate repair division. Major jobs may be done by city forces but more often are done by contract. All but two of the 46 cities surveyed let contracts for some or all repair and major alteration jobs on public buildings. Danville, Va., and Salina, Kans., do all their own maintenance and repair work with regular city forces. In Salina



crews of the city's public works and utilities departments do repair work on city buildings during inclement weather or slack times. Cities which contract for all repair work other than minor patching and replacing are: Eugene, Ore.; Grand Forks and Minot, N.D.; Puyallup, Wash.; Raleigh, N.C.; and University City, Mo.

Jobs which occur too infrequently for the city to maintain adequate crews and appropriate equipment are most often contracted. Examples of this type of work are re-roofing jobs, outside painting, and major changes in office layout. Jobs which would divert employees for a long period of time from other more important jobs should also be contracted. In the words of one city manager "the patching of the roof is done by the municipal buildings division; a complete reroofing job is done by contract. The painting of a single office is done by the buildings division; the repainting of several offices is done by contract."

In some instances local craft and trade unions will demand that repair work on public buildings be done only by union labor. This may result in the contracting of jobs which otherwise would be done by city forces. A number of inside jobs can be done by regular city crews during inclement weather. Decorating, minor alterations, building of book shelves, cleaning and painting equipment, and other similar jobs can be saved for crews ordinarily engaged in other activities.

#### Space Management

The proper utilization of the space in the city hall is of primary importance, especially where conditions are already crowded due to increased services or personnel. Proper utilization of space depends upon efficient layout and use of mechanical devices where possible. The flow of work should be studied to insure that layout of office space is the most efficient possible (see MIS Report No. 102 on location and layout of city halls for detailed suggestions on planning office layout).

A study should be made of filing methods to determine if space can be conserved in vaults and other storage areas. Schedules should be developed for the destruction of unneeded records and to provide for the permanent storage of the remainder. Micro-filming may be used to advantage in preserving tax records, city council minutes, and similar records which the city is required to save by legislative act or court decisions. The use of machine accounting and visible records systems also may help to conserve space where tax or utility billing is of considerable volume.

The city manager, his assistant, the division responsible for property management, or a department of administrative management, should receive requests from department heads for new space. The requests should be accompanied by a rough sketch showing the present layout of the area assigned to the department, the number of persons using the space, a statement showing why new space is necessary, and a suggestion as to where additional space may be found. Generally, new space will be required if the number of personnel in the department is substantially increased or if the department is taking on new functions which require more filing or machine space. Further study should be made by the responsible unit and recommendations for action should be made to the city manager.

In most of the cities surveyed there are no definite rules for allotting space. An increase in personnel or functions generally are considered by most of those reporting as sufficient reason for additional space if such space is available. In 36 of the 46 cities the city manager allots space in the city hall and studies requests for additional space. In four cities the director of the central maintenance agency performs this function. The assistant manager and the public works director are other officials who are sometimes responsible for this function. Suggestions on how to make a survey of layout of office space is presented in "A Manual for Administrative Analysis" (by John M. Pfiffner and Owen J. Lane. Wm. C. Brown and Co., 915 Main Street, Dubuque, Iowa. 1951 81 pp. \$2.50).

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### Real Property Management

The management of real property owned by the city depends upon a current complete inventory of all property, necessary records, a description of all improvements, and information as to the use of the land. An inventory of real property often will reveal properties which have not been recorded, deeds that have been lost, and public properties that are used by private individuals. To prepare an inventory, all available maps, plats, and records should be reviewed to establish ownership. All improved properties owned by the city should be inspected by the building inspector and recommendations made as to necessary repairs and use of facilities.

Three basic records are necessary to property management: (1) property ledger cards, (2) property envelope file, and (3) maps showing location of city-owned property. The ledger card for each parcel includes such information as method of acquisition, use, deed description, price, grantor, a description of improvements, easements, and utility connections, and a small scale diagram. The envelope file will include insurance policies, court records, council resolutions, and other basic documents relating to the parcel. Current tax maps, either copies of the assessor's maps or specially prepared plat maps, show city property locations throughout the city.

An annual inspection of the land and its use and a review of the property file should be made to maintain property records in a current condition. The city department or agency that is charged with property management also might handle the acquisition of rights-of-way for public streets, alleys, sewers, drains and water mains; negotiate for purchase of improved and vacant property, and prepare private sewer easements. It can also negotiate and handle leases of city property, control the rental of city-owned buildings, search titles to ascertain ownerships of property and encumbrances, prepare plats of city property, and prepare and file options for purchase of tax title land (see MIS Report No. 73 for a more detailed account of real property management).

### Related Services

Grounds and Approaches. The care of grounds and approaches adjacent to buildings owned by the city constitute an important part of building management activities. The work to be done includes cleaning of entrances, sweeping the walks, cutting and clipping the grass, policing the grounds, raking leaves, and removing snow. Unless grounds and sidewalk areas are extensive, most of this work can be done by the regular custodial force. Seeding of grass, the planting and care of trees and shrubs, and the building of sidewalks should be done by street or park department crews.

Protection. Public buildings, their occupants, and equipment should be protected from the unlawful actions of men and destructive action of the elements and fire. For most cities a separate guard or watch force should not be necessary. In each suite of offices an employee should be responsible for closing windows and locking doors and safes at the end of the day's work. The custodian should inspect the building after the office force has gone home to insure that all doors have been locked. Entrances to the building should be locked over night and not opened until a specified hour. If a night watchman is not provided regular police foot and motor patrols should include an inspection of all city buildings at regular hours during the night and over weekends and holidays.

Fire Prevention. Careful cleaning, prompt removal of scrap paper, and regular inspections of the building and its electrical wiring are important parts of any fire prevention program. In addition, the fire department should regularly inspect all city buildings. Fire extinguishers should be available and employees should be instructed in their use. If the building has a fire alarm system, it should be regularly inspected and tested. Employees should be instructed in the proper method of reporting fires. Plans should be made for evacuating the building in case of fire, and drills should be held periodically.



Communications. The central telephone switchboard can be of benefit both to the public and to the city employees. A central switchboard is of special advantage to the public for obtaining general information. Contacts between departments can be more frequent and less time consuming. A department housed in another part of the city can be as close as the nearest telephone and there is no need to tie-up lines into the city hall. Then, too, the city is better able to control long distance and other toll calls. Switchboards and other telephone facilities will be installed and serviced by the operating telephone company. Provision must be made within the city for the training and supervision of switchboard operators. In a small city it may be possible to combine operation of the switchboard with typing and other routine clerical tasks. The operator would be supervised by the manager or his assistant, the city clerk, or another administrative officer. In a larger city the volume of the work to be done may demand the employment of several operators supervised by a chief operator. For general administrative controls the unit could be assigned to the custodial division or to a department of central services.

Management of Concessions. Thirteen cities reported that they lease cigar stands, restaurants, and soft drink stands to private operators: Long Beach, Calif.; Des Moines, Iowa; Grand Forks, N. D.; Hutchinson, Kan.; Portland, Me.; Muskegon, Mich.; Niagara Falls, N.Y.; Asheville, N. C.; Enid, Okla.; Columbia, S. C.; Abilene, and Wichita Falls, Tex.; and Roanoke, Va. In seven cities concession facilities are leased to blind or other handicapped persons at no charge: Oakland, Calif.; Grand Rapids, Mich.; Schenectady, and Yonkers, N.Y.; Greensboro, N.C.; and Richmond, Va. Generally, however, vending machines for soft drinks, candy bars, and cigarettes are installed for the use of employees and the public. Profits may be credited to an employee fund for gifts, flowers, and parties. In Lexington, Ky., city hall concessions are operated by city personnel and profits credited to the employees' fund.

Cities with restaurants, soft drink stands, and cigar stands at airports and auditoriums or ball parks ordinarily lease such facilities to private operators. Bids are received for the privilege and leases are let to the best bidder. Contracts are often relet after one or two years. Most managers surveyed prefer this system.

Note: For detailed cleaning and maintenance schedules and for cleaning workloads see Management of Public Buildings, (Special Management Project IV-C, Buildings Management Division, General Services Administration, Washington 25, D.C., 1950). Public officials may obtain single copies free on request to GSA. The magazine Buildings (monthly, 427 Sixth Avenue, S.E., Cedar Rapids, Iowa. \$3) devotes the April issue each year to a discussion of the cleaning of buildings and building equipment.

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